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February 18, 2000

Via Hand Delivery

Magalie Roman Salas, Secretary
Federal Communications Commission
445 12th St., S.W., Room TW-B204
Washington, D.C. 20554

Re: Written *Ex Parte* Communication in ET Docket No. 98-206, RM-9147, and RM-9245

Dear Ms. Salas:

This letter is submitted on behalf of SkyBridge L.L.C. ("SkyBridge") and responds to various *ex parte* communications filed by Northpoint Technology, Ltd. ("Northpoint") in the above-referenced proceeding, particularly one filed on January 6, 2000.[1/] In its submissions, Northpoint continues its attempts to justify its proposed entry into the 12.2-12.7 GHz ("12 GHz") band. It also makes a number of proposals for "sharing" in that band with non-geostationary orbit ("NGSO") Fixed-Satellite Service ("FSS") systems. For the reasons summarized below -- each of which is explained in greater detail in the attached Annex -- Northpoint's proposals must be rejected.

Before addressing these proposals, SkyBridge makes three preliminary points. First, SkyBridge does not view Northpoint as a potential marketplace competitor. Northpoint is currently proposing essentially a one-way video service, to compete with cable and satellite television providers. SkyBridge's two-way

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1/ See Letter to Ms. Magalie Roman Salas from Antoinette Cook Bush, et al., January 6, 2000 ("Northpoint January 6 Letter").

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broadband service, on the other hand, will serve a distinctly different demand for advanced telecommunications services.

Second, SkyBridge supports the Commission's continuing efforts to improve the efficiency of spectrum use, particularly in the Ku-band. SkyBridge's system itself will re-use all of the frequencies it is seeking to employ, and SkyBridge has not sought the exclusive use of any spectrum. As it has demonstrated over the last three years, SkyBridge will protect existing geostationary and terrestrial services, and will be able to share spectrum with other NGSO FSS systems, which results in a tremendous increase in spectrum efficiency. Obviously, SkyBridge supports the Commission's efforts to accommodate multiple services in the 12 GHz band.

Third, as is described in greater detail below and in the attached Annex, SkyBridge stands ready to provide affordable advanced telecommunications service to every corner of the United States from virtually the outset of commercial service. Permitting Northpoint to enter the 12 GHz band in a manner consistent with its current technical proposals, however, could substantially undermine SkyBridge's ability to assist the Commission in achieving its oft-stated goal.

There appear to be a great number of misconceptions about the Northpoint system and its ability to share the 12 GHz band with NGSO FSS systems. The record must be set straight, because the Commission's failure to appreciate the true impact of Northpoint's proposed operations on NGSO systems could lead the Commission to take steps directly in conflict with the goals established by Section 706 of the Communications Act. As SkyBridge has demonstrated on numerous prior occasions,[2/] and will demonstrate again below and in the attached Annex:

- Despite Northpoint's claims to the contrary, Northpoint will do nothing to meet the Commission's objectives of providing either advanced

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[2/] See, e.g., (1) Comments of SkyBridge in ET Docket No. 98-206, RM-9147, and RM-9245, March 2, 1999 ("SkyBridge NPRM Comments") at 109-116; (2) Reply Comments of SkyBridge in ET Docket No. 98-206, RM-9147, and RM-9245, April 14, 1999 ("SkyBridge NPRM Reply Comments"), at 91-112; (3) Comments of SkyBridge on Request of Broadwave Albany, L.L.C., et al. for Waiver of Part 101 Rules, DA 99-494, April 12, 1999; (4) Opposition of SkyBridge, File Nos. SAT-AMD-19980630-00056; SAT-AMD-19990108-00004, August 4, 1999 ("SkyBridge Opposition"), at 21-28; (5) Letter to Ms. Magalie Roman Salas from Jeffrey H. Olson et al., ET Docket No. 98-206, RM-9147, and RM-9245, November 10, 1999 ("SkyBridge November 10 Letter"); and (6) Letter to Ms. Magalie Roman Salas from Jeffrey H. Olson et al., ET Docket No. 98-206, RM-9147, and RM-9245, December 15, 1999 ("SkyBridge December 15 Letter").

telecommunications services or "local-into-local" service to residents of rural areas.

- Northpoint's proposed services and technology have no place in the 12 GHz band, and can be better accommodated in other bands which already are allocated for Northpoint-type services.

- Northpoint's NGSO FSS "sharing" solutions are totally impractical and would impose technically and economically unjustifiable burdens on NGSO FSS systems.

Below, SkyBridge provides a summary overview of these points, which are explored in greater detail in the attached Annex.

Northpoint Will Not Provide Advanced Telecom Services, Particularly in Rural Areas.

Northpoint is proposing an essentially one-way video service; some data services may also be offered. This means that, by definition, it cannot provide advanced broadband services. These services, which SkyBridge will provide (such as video-conferencing, tele-learning, tele-medicine, and local infrastructure for telephony and wireless local loops, require full two-way interactivity. Perhaps more importantly, like most other terrestrial microwave services, Northpoint's technology is ill-suited to the rural environment.

Although Northpoint has pledged to provide substantial service in rural areas, it has not explained how it will overcome the laws of physics to provide rural service in an economically efficient manner. Northpoint's own technical submissions state that full deployment of its system over a given service area will require transmitters spaced as closely as 10 km apart throughout that area -- in other words, it will take nearly 1000 Northpoint transmitters to serve the same area as a single SkyBridge gateway cell. As the Commission knows from the MMDS, LMDS, and DEMS experiences, such terrestrial services are unlikely to be deployed in rural areas, due to fundamental economic realities, and there is not a shred of probative evidence to support Northpoint's claim to the contrary.[3/]

On the other hand, **the very *purpose* of broadband satellite systems, such as SkyBridge, is to reach rural areas**. Once launched, the SkyBridge satellites can *immediately* serve a farmhouse for the *same cost* as a townhouse. Although urban

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[3/] As is demonstrated in the attached Annex, Northpoint's intimation (it never really commits to this) that it can cover large areas using seemingly inexpensive repeater stations is illusory in every respect.

areas are a key SkyBridge market, it is in rural areas that SkyBridge's competitive advantage over fiber and wireless solutions becomes most important; rural markets are critical to SkyBridge's business plan.

There can be no doubt of SkyBridge's intent in this regard. SkyBridge has strongly supported the national coverage requirement applicable to NGSO FSS space segment proposed in the Commission's NPRM in this proceeding. But, as the Commission is well aware, placing a satellite "footprint" on the ground represents only half the equation. The necessary ground segment facilities (in this case, the gateways) also must be in place before consumers can obtain the benefits of the technology.

This is why, in the January 1999 amendment to its application (and as is also discussed in the attached Annex), SkyBridge explained at some length how, through the use of "relay links," it could provide service to rural areas, even before its national gateway infrastructure was fully deployed. In brief, relay links can be used to serve customers situated in areas not yet served by a dedicated gateway. With only seven or eight properly sited gateways, SkyBridge can cover the entire United States, including Alaska and Hawaii, using these relay links.

SkyBridge will have sufficient gateway facilities deployed to permit nationwide service availability within 12 months from the start of its commercial service in the United States. Regardless of whether the Commission decides to establish an additional milestone for all NGSO FSS licensees -- mandating the early deployment of necessary ground segment facilities sufficient to ensure true nationwide service availability -- it is clear that, ***for SkyBridge, there will be no digital "red-lining."***

However, SkyBridge's ability to provide such expedited nationwide service is predicated on its having access (shared with GSO and other NGSO systems) to the full 11.7-12.7 GHz downlink bandwidth requested in its application (as amended), and having the flexibility to use different frequencies in different cells. As is discussed in greater detail in the attached Annex, implementation of one or more of Northpoint's various "sharing" schemes would jeopardize SkyBridge's ability to provide expedited nationwide coverage. In this regard, as SkyBridge previously has demonstrated, Northpoint threatens the Commission's ability to achieve the national policy of Section 706 of the Communications Act, without offering any countervailing public interest benefit that cannot be attained through other means.

Northpoint Does Not Need to Use the 12 GHz Band.

Northpoint's proposed services and technology have no place in the 12 GHz band for several reasons.

First, ***a variety of other bands have already been allocated that are more suitable for Northpoint-type services than is the 12 GHz band.*** The LMDS (28 GHz, 38 GHz), DEMS (24 GHz), MMDS (2.5 GHz), and 700 MHZ bands would all provide Northpoint not only the ability to provide local channels, but would permit true two-way interactivity as well. Moreover, to the extent that Northpoint can someday prove its case vis-à-vis noninterference to DBS, the 17.3-17.8 GHz band also should be available to it; because DBS operations will not begin service in that band for some time, Northpoint's presence in the band could be far more easily accommodated.

Second, ***because Northpoint will not be able to provide local-into-local service that is truly integrated with satellite television services, its original rationale for operating in the band is eliminated.*** Even if Northpoint provides local channels as part of a "wireless cable"-type service, the service: (1) would not be integrated with DBS service; (2) would represent only a very small part of its total spectrum use; and (3) would not address the need for either local-into-local or advanced telecommunications service in rural areas.

Third, ***Northpoint has not demonstrated that consumers will obtain any benefit from its use of the 12 GHz band as opposed to some other band.*** Despite Northpoint's undocumented claims to the contrary, consumer equipment exists for other bands. Such equipment has been in use for years by wireless cable providers in the 2.5 GHz band (Northpoint principals themselves operate some of these systems). Further, Northpoint has not demonstrated how it will be able to "piggyback" off the existing DBS reception equipment on the market (there are several technical reasons why it cannot). Moreover, of equal import, no suitable transmission equipment exists at 12 GHz; Northpoint would have to develop such equipment itself. The commercial advantages of operating in the 12 GHz band are therefore far from clear.

There is no technical reason why Northpoint could not operate in one of the bands already allocated for such terrestrial services. While Northpoint claims it could not share with existing terrestrial wireless services already operating in the other bands, this is irrelevent. Northpoint is not being asked to do so. These bands are essentially licensed on a geographic basis to a single licensee. Once Northpoint won licenses at auction, or bought licenses in the after-market (as all its competitors have had to do), Northpoint could implement its system in any way it liked, including

using omni-directional transmitters and higher power levels to increase the size of its service area, thereby reducing the cost and complexity of its service.

Northpoint's Spectrum-Sharing "Solutions" Are Illusory.

Finally, Northpoint has failed to demonstrate that it can share with the primary users of the 12 GHz band. ***When SkyBridge filed its application to enter the 12 GHz band three years ago, the Commission made clear that it would not make any allocation -- let alone adopt service rules or license any NGSO FSS system in the band -- until a definitive showing was made by NGSO FSS proponents that DBS systems in the band would be fully protected. Essentially, SkyBridge was required to reach consensus with the DBS industry before any of its proposals would be permitted to go forward.***

As the Commission is aware, after more than three years of rigorous study and compromise, international agreement has been reached on the technical rules to facilitate entry of new NGSO FSS services while protecting these DBS services. This success has been at considerable effort and expense.

To date, ***Northpoint has utterly failed to demonstrate that it can share spectrum with either DBS or NGSO FSS systems without causing harmful interference***. In the case of NGSO FSS systems, Northpoint admits that SkyBridge and other NGSO operators "would need to alter their systems or operations to protect Northpoint." Northpoint proposes that SkyBridge either redesign its satellite constellation or redesign its spacecraft antennas to afford Northpoint greater protection. In addition, Northpoint suggests that SkyBridge should be required to use satellite diversity, frequency diversity, and/or band segmentation to reduce the inevitable interference from the Northpoint system into SkyBridge user terminals. Unfortunately, Northpoint has made these proposals without a thorough understanding of the SkyBridge system's design and intended operation.

As detailed in the attached Annex, each of Northpoint's "sharing" proposals would place all of the sharing burden on NGSO FSS systems, and result in technically and economically unjustifiable costs to NGSO FSS operators. This is a startling proposition coming from an ostensibly secondary service that seeks to co-exist with the NGSO FSS systems that the Commission has proposed to make primary in the band, consistent with the global allocation.[4/]

[4/] Indeed, Northpoint's proposals are flatly inconsistent with Section 2005 of the Satellite Home Viewer Act ("SHVA"). This provision requires a finding that services of the sort Northpoint has proposed do not cause harmful interference to primary services, including, the legislative history makes clear, both

(continued...)

* * *

As is demonstrated more fully in the attached Annex, Northpoint has not provided any evidence to support its claims that it: (1) will provide service in rural areas; (2) cannot provide its proposed services -- whatever that may ultimately encompass -- in other bands where it will not threaten the operations of primary services; and (3) will not have a significant adverse impact on NGSO operations. With regard to the first two points, the record is barren of any factual -- rather than rhetorical -- proof to the contrary offered by Northpoint, and, as to the last point, Northpoint openly admits that it will cause harmful interference to NGSO systems. Under the circumstances, there is no rational basis upon which the Commission presently can ground any action favorable to Northpoint. There is no public policy goal -- local-into-local or anything else -- that justifies threatening the demonstrated ability of NGSO systems to meet the overarching goals set out in Section 706 of the Communications Act.

Thus, before taking any action with respect to Northpoint -- even a preliminary decision regarding eventual access for such services to the 12 GHz band -- the Commission must hold Northpoint to the same high standard to which NGSO FSS proponents have been held. As was done in the case of NGSO FSS systems, the Commission must require Northpoint to establish, in a technically rigorous and verifiable fashion, its claims of compatibility. Even a preliminary decision to permit Northpoint-type terrestrial services in the band must be supported, at the outset, by a solid technical demonstration which will make clear that: (1) NGSO systems will not receive harmful interference from those potential future terrestrial operations; and (2) of equal import, NGSO systems will not be forced to redesign their systems or modify their operations in order to accommodate those terrestrial services.

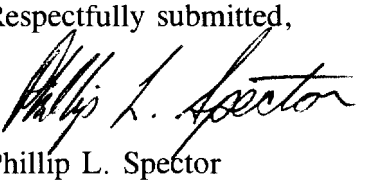
Any departure from this standard would be grossly arbitrary and discriminatory and could undermine the delicate balance recently established in the international NGSO/GSO/FS sharing regime, which is predicated on NGSO FSS access to spectrum adequate to provide on-demand two-way broadband services. It would be astonishing for the Commission to abandon this international consensus -- a consensus that, in the final analysis, was championed by the U.S. Government -- by precipitous action on Northpoint's proposal.

[4/] (...continued)
existing DBS operations and *future NGSO FSS systems*. Northpoint freely admits that it will cause harmful interference to NGSO services, and the record to date strongly supports the DBS industry's claims of interference.

As noted above, SkyBridge has no per se objection to Northpoint's entry into the 12 GHz band. If, ultimately, a satisfactory sharing arrangement can be worked out with all of the DBS licensees and NGSO FSS applicants, SkyBridge would not oppose Northpoint's entry into the band. But at this juncture, there is no basis in the record to support Northpoint's position. Northpoint's chimerical promises cannot alter the laws of economics or physics, nor can they form the basis for a policy judgment by the Commission that would so clearly be in conflict with the goal of Section 706.

If there are any questions regarding this matter, please contact the undersigned.

Respectfully submitted,



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The Honorable Susan Ness
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Annex

to

Written *Ex Parte* Communication in
ET Docket No. 98-206, RM-9147, and RM-9245

of

SkyBridge, L.L.C.

February 17, 2000

Table of Contents

I. NORTHPOINT'S PROPOSAL DOES NOTHING TO ADDRESS THE CRITICAL NEED FOR ADVANCED TELECOMMUNICATIONS SERVICES IN RURAL ENVIRONMENTS.

As described in greater detail infra, there are many unresolved technical issues regarding Northpoint's ability to coexist with either DBS or NGSO FSS systems in the 12.2-12.7 GHz band ("12 GHz band"). Indeed, the only area of technical agreement appears to be that Northpoint would indeed cause widespread harmful interference to NGSO FSS systems, interference which Northpoint believes the victim should be obliged to eliminate, without regard to cost. Northpoint's approach to this problem is entirely irrational, without legal or factual support.

Nonetheless, the types of services proposed by Northpoint -- if viewed with an uncritical eye -- appear politically attractive.[1/] Thus, it seems that at least some persons on the Commission staff favor accommodating Northpoint, without regard to the enormous adverse impact such a decision would have, not just on NGSO and DBS services, but on the vital public interest goal established by Section 706 of the Communications Act.

This would be a most unfortunate path to follow. As SkyBridge has repeatedly demonstrated in this proceeding, and will do again below: (1) only satellite systems, and particularly NGSO systems such as SkyBridge, have the technical capability to economically bridge the rural "digital divide"; (2) Northpoint's entrance into the 12 GHz band, as currently proposed, will substantially diminish NGSO's systems' capacity in that regard; and (3) there is no evidence to support the belief that Northpoint's rudimentary terrestrial system will provide any services to truly rural areas.

A. Northpoint's proposed wireless cable alternative will not satisfy the demand for advanced interactive telecommunications services.

Northpoint proposes to offer one-way multichannel programming and some data services, theoretically in competition with cable and DBS providers. However, two-way capability is becoming a critical feature in this market, and it is

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1/ Northpoint affiliates filed, on January 8, 1999, 69 applications to provide Northpoint services in the 212 "television markets" (the "Broadwave Applications"). As discussed below, these applications have not yet been placed on Public Notice as acceptable for filing, and would not even be eligible for licensing under Northpoint's proposed service rules. See infra Sections II.A.1, II.A.3. Instead, in their applications, the Broadwave affiliates simply seek all waivers necessary to permit consideration of the applications, without any particular specificity as to what that request might entail.

not at all clear whether Northpoint can truly compete with, e.g., a high-speed two-way cable system.[2/]

By contrast, SkyBridge's low earth orbit ("LEO") satellite system will provide a range of truly interactive data, voice and video broadband and narrowband services with fiber-like connectivity.[3/] The system will provide users the "last mile" pipelines needed for high-speed, fully-interactive, Internet access and on-line services, video-conferencing and video-telephony, multimedia entertainment services, telecommuting, tele-learning and tele-medicine, and LAN interconnection. It can also provide infrastructure links for telephony, wireless local loops and mobile communications.[4/] In sum, ***SkyBridge can provide all the applications that Northpoint proposes to provide, plus those advanced services requiring full broadband interactivity***, such as video-conferencing, tele-learning, tele-medicine, and local infrastructure for other services.

[2/] Northpoint acknowledges that this is a problem, and apparently plans to adopt rudimentary two-way capability by using the telephone network as a return path (unless some other, as yet unidentified, non-12 GHz spectrum can be found). See http://www.northpointtechnology.com /html/interactive_services.html, visited February 7, 2000.

[3/] Application of SkyBridge L.L.C. for Authority to Launch and Operate a Global Network of Low Earth Orbit Communications Satellites Providing Broadband Services in the Fixed-Satellite Service, File No. 48-SAT-P/LA-97, filed Feb. 28, 1997; Amendment, File No. 89-SAT-AMEND-97, filed July 3, 1997; Amendment, 130-SAT-AMEND-98, filed June 30, 1998; Amendment, filed Jan. 8, 1999 ("SkyBridge 1999 Amendment").

[4/] In attempting to argue that its proposal to offer a return path via telephone line is not "rudimentary", Northpoint implies that SkyBridge also relies on the telephone infrastructure. See Letter to Ms. Magalie Roman Salas from Antoinette Cook Bush, et al. dated January 6, 2000 ("Northpoint January 6 Letter") at 5. This is simply not true. SkyBridge does not rely on a telephone link in either direction, but provides full satellite connectivity to the user on both the forward and return path. SkyBridge does employ terrestrial infrastructure, but only high speed backbone links between gateways and the terrestrial networks being accessed by users. Moreover, while SkyBridge generally plans to allocate greater bandwidth on the forward path than on the return (consistent with Internet traffic patterns), the links in both directions will offer far greater bandwidth than conventional telephone lines (or Northpoint's proposed system), and SkyBridge will have the flexibility to provide "bandwidth on demand."

B. Satellite services are the only way to provide universal broadband coverage to rural America.

Northpoint repeatedly touts what it considers its superior ability to reach more American consumers, and in particular asserts that it will "provide substantial service in rural areas."[5/] As discussed further below, however, the deployment of a service in rural areas that requires the extensive terrestrial infrastructure Northpoint proposes (transmitters spaced as closely as 10 kilometers apart) will not happen quickly, if ever. Neither Northpoint nor any other terrestrial broadband alternative (e.g., MMDS, LMDS, DEMS) will soon reach rural Americans due to technical limitations and basic economics. Northpoint offers not a scintilla of probative evidence to the contrary.

On the other hand, **the very *purpose* of broadband satellite services, such as SkyBridge, is to reach rural areas.**[6/] Indeed, low earth orbit ("LEO") satellite systems such as SkyBridge are best suited to bridge the "digital divide" that separates rural America from the urban areas sought to be served by Northpoint.[7/] With SkyBridge's competitive pricing, it will be able to compete with fiber, cable modems, DSL and terrestrial wireless solutions even in urban areas.[8/] However, it is

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[5/] Northpoint January 6 Letter at 4.

[6/] See, e.g., Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, FCC 99-5, (rel. Feb. 2, 1999) at 28, nn.110-111; Comments of SkyBridge in CC Docket No. 98-146, September 8, 1998; Reply Comments of SkyBridge in CC Docket No. 98-146, October 8, 1998; Comments of SkyBridge in BO Docket No. 99-11, June 28, 1999; Comments of SkyBridge in CC Docket No. 96-94, December 17, 1999. It is telling that, for all its claims of interest in serving rural areas, Northpoint has not participated in these proceedings.

[7/] Moreover, the 12.2-12.7 GHz band can accommodate multiple, competing, NGSO FSS providers. This will ensure that a diversity of NGSO service offerings, and fair prices, are available to consumers. Northpoint has never even suggested that it could, or would, share the band with competing terrestrial providers. Indeed, deployment of Northpoint's system in a market would preempt virtually all other conceivable terrestrial (and satellite) applications in the band.

[8/] Starting in 2003, SkyBridge will begin providing high-speed, fully-interactive, broadband services to every corner of America, with monthly access charges for the average residential user of approximately ***$35.00 per month for up to***

(continued...)

in rural areas that SkyBridge's competitive advantages become most important. Such markets are critical to SkyBridge's business plan. Once launched, the satellites of the SkyBridge constellation can ***immediately*** serve a farmhouse in the middle of the Great Plains ***for the same cost*** as a townhouse in Manhattan.[9/] Unlike terrestrial systems such as Northpoint, rural users will not have to wait for SkyBridge to "build-out" to rural areas; the SkyBridge satellites will blanket the country from the start of service. Every point in each of SkyBridge's 450-mile wide cells will have access to the same services and at the same cost, regardless of whether they are in urban or rural areas. The SkyBridge system can connect users who have no hope of any other high-speed, two-way terrestrial connection. Put simply, terrestrial services will *never* come close to matching the ability of satellite services to rapidly provide critical advanced telecommunications services to the rural U.S.[10/]

8/ (...continued)
20 Mbps service. The full retail cost of the residential user terminals should be under $700, although, consistent with, e.g., the DBS and cellular markets, the consumer hardware will be highly subsidized by long-term service contracts. Moreover, these discounts/subsidies can be expected from day one, given the competitive environment.

As the Commission is well aware, the price point for the user terminals is among the most important determinants of the success for this type of consumer service, and SkyBridge has taken great pains to ensure that the costs remains low. However, as explained below, design changes to counteract the threat of Northpoint interference will jeopardize the affordability of the user terminals.

9/ In particular, as SkyBridge has explained in detail in two Commission proceedings, NGSO FSS systems such as SkyBridge could radically transform the lives of people on tribal lands, and provide a new infrastructure that will help bring these areas all the benefits and opportunities of the emerging information economy. Such systems will offer tribes the opportunity to take an active role in developing and deploying this infrastructure, without the need to rely on the investment decisions of outside entities. See Comments of SkyBridge, L.L.C., In the Matter of Extending Wireless Telecommunications Services to Tribal Lands, WT Docket No. 99-206, Nov. 10, 1999; Comments of SkyBridge, L.L.C., In the Matter of Telephone Service for Indians on Reservations, BO Docket No. 99-11, June 28, 1999.

10/ Northpoint claims that it will have the capacity to serve a much greater percentage of the U.S. population than SkyBridge. Northpoint January 6 Letter at 2. However, Northpoint's comparison of its essentially broadcast service -- which inherently can be picked up by every house its signal passes
(continued...)

There can be no doubt of SkyBridge's intent in this regard. SkyBridge has strongly supported the coverage requirements proposed by the Commission in the instant proceeding, which include a strict nationwide coverage obligation.[11/] These requirements would ensure that all NGSO FSS systems in the subject bands serve every corner of the United States, providing competitive broadband service to all Americans. No terrestrial system could ever hope to meet such a condition.

Moreover, ***SkyBridge will have the capability to honor such a commitment early in the deployment of its system, so long as it has access to the full 11.7-12.7 GHz band (shared with GSO and other NGSO systems) and the flexibility to implement the necessary frequency assignment/switching strategy.*** SkyBridge envisions that, as demand grows, between 30 to 40 gateways eventually would be deployed in the United States to handle the full capacity of its system. However, using its "relay links," SkyBridge can provide coverage to the 48 contiguous states with only a few gateway installations (as few as 5, depending on location).[12/]

10/ (...continued)
(that chooses to subscribe) -- and SkyBridge's two-way broadband service -- which pipes individualized broadband content to and from subscribers -- is grossly misleading. Moreover, in contrast to Northpoint, *SkyBridge will cover the entire U.S.* It will have the capability to not only provide real two-way competition in urban areas, but also to close the "digital divide" and serve those customers not yet reached by fiber, DSL or terrestrial wireless services.

11/ Notice of Proposed Rulemaking, Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band and Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates, ET Docket No. 98-206, RM-9147, RM-9245, FCC 98-310, rel. Nov. 24, 1998 (the "NPRM"), ¶ 84; Comments of SkyBridge in ET Docket No. 98-206, March 2, 1999 ("SkyBridge NPRM Comments") at 82, 104-105; SkyBridge Reply Comments in ET Docket No. 98-206, April 14, 1999 ("SkyBridge NPRM Reply Comments") at 81.

12/ See SkyBridge 1999 Amendment, A-6. Relay links can be used to serve user terminals in a cell that does not yet have a dedicated gateway facility through a gateway located in another nearby cell. Such a link is achieved via transparent RF cross-connects on the SkyBridge satellites to route user traffic from a spot-beam covering a region in which no gateway is yet located to the spot-beam serving a gateway located in another cell. Through use of relay links, SkyBridge will be able to immediately provide coverage to areas whose traffic demands do not yet require a dedicated gateway. This is a key component of
(continued...)

Additional gateways will provide total coverage to Alaska and Hawaii. ***SkyBridge will have the gateway facilities needed to provide nationwide service within 12 months of its initiation of commercial service in the U.S.*** With all of the required infrastructure and investment in place, every incentive will exist to market heavily to rural areas.[13/] Rural America will be linked to the SkyBridge system from the start; there will be no digital "red lining" with the SkyBridge system.[14/]

C. Terrestrial systems are ill-suited to providing universally-available service to rural areas.

It is difficult, if not impossible, for terrestrial wireless systems to serve non-urban areas on an economically viable basis. Northpoint's technology is no different in this respect than, e.g., the 2.5 GHz Multichannel Multipoint Distribution Service ("MMDS") systems of MCI and Sprint, the 24 GHz Digital Electronic Message Service ("DEMS") system of Teligent, or the 28/38 GHz Local Multipoint Distribution Service ("LMDS") systems of WinStar and others. All of these systems have a clear interest in pursuing more lucrative urban markets best suited for their technologies. Venturing into rural America will not be a high priority, because of the basic economics of serving low population density areas.[15/] This inability to serve

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12/ (...continued)
the SkyBridge architecture, as it permits SkyBridge to quickly and efficiently enter the market for rural services, which is critical to its business plan.

13/ The various SkyBridge service providers must make an equity investment in SkyBridge and must purchase substantial system capacity. They will have equal incentive to sell the capacity to both rural and urban customers.

14/ As discussed below, the impact of Northpoint operations on the SkyBridge system is magnified in rural areas, even if Northpoint transmitters are scarce in such areas. For example, Northpoint's proposal that NGSO systems use frequency diversity to mitigate Northpoint interference would constrain SkyBridge's ability to serve low traffic areas with a single transponder or to employ its relay links to expedite service to rural areas. This would be the case even if only a few Northpoint transmitters were in operation within the 450-mile wide SkyBridge cell in question.

15/ For example, the 2.5 GHz MMDS service has been in existence for well over a decade. Little MMDS service is provided in truly rural areas. This is partly due to propagation problems (e.g., line-of-sight requirements), which would in fact be substantially more difficult to overcome at 12 GHz, particularly with the directional constraints inherent in the Northpoint system. Most importantly, simple economics dictates this result; it is far more profitable to
(continued...)

rural areas is the critical constraint in providing universal access to advanced telecommunications services today.

Northpoint takes issue with SkyBridge's assertion that Northpoint is unlikely to provide service to rural areas any time soon.[16] But, Northpoint offers nothing to support this claim, which runs contrary to every known precedent. Indeed, Northpoint's own pleadings demonstrate the less than audible nature of its claims.

In a January 10, 2000, *ex parte* filing, Northpoint provided a one-page "analysis" of the cost of installing repeater stations throughout the 19 counties of the San Antonio, Texas DMA.[17] Presumably intended to show how "easily" Northpoint could cover rural areas, Northpoint there claims that a repeater station would cost $48,000, and provide coverage of 150 square miles.

As an initial matter, Northpoint's submission raises as many questions as it answers. Does the $48,000 figure cover only the cost of the repeater hardware (no manufacturer is specified)? Does it include installation expenses, the cost of constructing a tower (and buying or leasing the underlying land) or leasing a site on the roof of a highrise (exceedingly rare in rural areas)?[18] Does it include the cost of bringing in power to a remote site, or constructing access roads? Standing alone, with no explanation regarding the inclusion or exclusion of the myriad of additional variables that can attend such an undertaking, Northpoint's claim that a repeater costs $48,000 is meaningless.[19]

15/ (...continued)
serve urban and suburban areas, particularly multiunit dwellings (especially "highrises," where a roof-mounted antenna can overcome terrain problems), than to serve individual, widely-spaced single-family homes in rural or suburban areas.

16/ Northpoint January 6 Letter at 4.

17/ See Letter to Ms. Magalie Roman Salas from Brian Weimer, ET Docket No. 98-206, RM-9147, RM-9245, January 10, 2000 ("Northpoint January 10 Letter").

18/ Elsewhere, Northpoint's states that its typical transmitter height above average terrain is 150 m.

19/ The coverage claims for that repeater also are meaningless. No antenna heights or power levels are given, and the highly stylized "cells" illustrated in the Northpoint January 10 Letter do not appear to take into account the effects of terrain. Nor does the document explain whether the part of Texas in question is representative of the U.S. as a whole. Finally, the deployment
(continued...)

However, even if it is assumed *arguendo* that a 12 GHz repeater actually can be purchased and installed for $48,000, all Northpoint has demonstrated is that its service could be provided at far lower cost, with better coverage, in other bands. For example, the same $48,000 (and probably less) could also be used to purchase a 2.5 GHz repeater (which have been on the market for the past decade). A 2.5 GHz system -- with considerably better propagation characteristics and the ability to operate omni-directionally (the user terminals not having to "point north") -- can easily cover a cell with a radius of approximately 30 miles, or an area of up to approximately 2,800 square miles. This, as compared to Northpoint's stated 150 square mile cell.

Thus -- again relying on Northpoint's own numbers -- it would take approximately 18 of Northpoint's 12 GHz repeaters to do the work of one 2.5 GHz repeater. Put another way, if, as Northpoint suggests in its January 10 Letter, it costs $4.59 "per pop" to construct a 12 GHz repeater, the same job could be accomplished at 2.5 GHz for $0.25 per pop.

In the absence of an explanation by Northpoint as to why the laws of economics operate differently at 12 GHz than at 2.5 GHz, it must be assumed that Northpoint's promises of near-term rural service can fairly be measured against the reality of far lower-cost MMDS deployment. As the Commission is well aware, there are few, if any, MMDS stations deployed in truly rural areas. By this measure, Northpoint's claim that things will be different at 12 GHz falls flat.

In sum, there is no evidence that any substantial service in rural areas would be provided by a Northpoint affiliate at any time in the near future, and ample evidence that it would not. By contrast, SkyBridge is ready to commit to national coverage at an early stage of its system deployment. The only way for the Commission to ensure that truly advanced telecommunications services are provided to all Americans as soon as possible is to expedite the licensing of NGSO FSS systems. Moreover, for the reasons given below, Northpoint's proposal represents a primary obstacle to achieving this goal.

19/ (...continued)
pictured by Northpoint does not seem to take into account Northpoint's stated goal that its customers be within line-of-sight of at least three transmitters, to allow reception options sufficient to overcome blockages. See infra Section III.C.

II. NORTHPOINT'S PROPOSED SERVICES AND TECHNOLOGY HAVE NO PLACE IN THE 12 GHz BAND.

A. A variety of other bands have already been allocated for Northpoint-type services.

Northpoint's current proposal to provide wireless Multichannel Video Programming Distribution ("MVPD") -- in competition with cable and DBS providers -- is nothing more (and, as an essentially one-way service, is substantially less) than LMDS, MMDS, or DEMS by another name.[20/] The Commission has already allocated an enormous amount of spectrum for these services in, inter alia, the 2.5 GHz, 24 GHz, 28 GHz and 38 GHz bands. And, the Commission now proposes an additional flexible allocation for the 700 MHz band television channels to be auctioned in July of this year. The Northpoint MVPD service (including any local TV channels) could readily be provided in these allocations, which would have the added benefit of permitting true two-way communications. Indeed, ***Northpoint has admitted that its system could be deployed in a variety of available bands, specifically including the 28 GHz LMDS band.***[21/]

Despite the advantages of operating in another band, Northpoint has advanced an ever-changing variety of justifications for entering the 12 GHz band. As SkyBridge has demonstrated in the past, and demonstrates again below, none of these justifications survive the slightest scrutiny.[22/] At this point, Northpoint's arguments

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20/ While it is up to Northpoint to find its market niche, the viability of its one-way service in competition with, e.g., two-way high-speed cable modems is not at all clear. But, even if the marketplace accepts Northpoint telephone line return link, this does not necessitate or justify its use of the 12 GHz band.

21/ See http://www.northpointtechnology.com/html/spectrum_planning.html, visited February 7, 2000. ("Northpoint should be considered in all frequencies where operators are making a transition from analog to digital or when frequencies are being reallocated. . . . In the instance of the 28-GHz band, it is still possible for Northpoint Technology to be adopted since many of the systems have not yet been built . . . .").

22/ Among the most astonishing of Northpoint's arguments is its claim that "consumers have already voted with their dollars to make 12 GHz a multi-channel video band." Northpoint January 6 Letter at 6. That statement is both legally and factually wrong, and irrelevant. The Commission, not consumers, chose to make the 12 GHz band a multi-channel video band when it reallocated 12.2-12.7 GHz for DBS use; consumers, to the extent one counts

(continued...)

are nothing but a transparent effort to circumvent the Commission's requirements (most notably, to avoid an auction) for access to the several bands of spectrum already allocated for terrestrial broadband and MVPD services.

Finally, before deciding on any allocation for Northpoint-type services at 12 GHz, ***the Commission should explore the possibility of sharing among Northpoint, DBS, and NGSO FSS systems in the 17.3-17.8 GHz band***. Like the 12 GHz band, this band is currently allocated to BSS downlinks, starting in 2007. In contrast to the 12 GHz band, however, *only NGSO FSS gateways, and not user terminals, are proposed in this band*. This makes Northpoint/NGSO FSS sharing much easier to accomplish than in the 12 GHz band, which is the only downlink band available for NGSO FSS user terminals. The small number of NGSO FSS gateway facilities, and their known locations, would greatly facilitate coordination between NGSO FSS and Northpoint-type systems.

Locating Northpoint-type systems in the 17.3-17.8 GHz band would also provide a way for Northpoint to utilize its sharing technology with DBS (assuming arguendo that it can prove its case vis-a-vis DBS), but in a way that does not threaten the core DBS services already existing at 12 GHz. The 17.3-17.8 GHz band is not currently used by DBS for downlinks, but will be used for future systems. As such, both DBS and Northpoint-type systems could plan for sharing in advance.

1. Northpoint cannot provide local-into-local service that is truly integrated with DBS service.

Northpoint originally justified its entry into the 12 GHz band with a promise to supplement DBS service with local channels, in affiliation with DBS providers. That plan has long since been discarded.

22/ (...continued)
early TVRO use, probably would have preferred C-band. More particularly, the Commission made the 12.2-12.7 GHz band a *satellite-delivered* multi-channel video band, *specifically clearing the band of the then-existing point-to-point terrestrial services*. Now, Northpoint would have the Commission reverse its findings regarding coexistence among a ubiquitous consumer satellite service and terrestrial point-to-point services, and instead introduce a ubiquitous point-to-multipoint service into that satellite band. What consumers have voted for -- and what the Commission has ensured, by clearing the band of prior terrestrial systems and holding NGSO systems to the highest standards of proof -- is excellent DBS reception. By the standard of proof applied to NGSO systems, the record clearly supports only one conclusion: that Northpoint will cause harmful interference to DBS systems.

DBS operators have rejected Northpoint (on the basis of significant and documented technical concerns), opting instead to provide local-into-local service by means that do not threaten, as Northpoint does, interference to their systems. From a technical standpoint, ***Northpoint will not be able to provide local-into-local service that is truly integrated with DBS service***, which eliminates Northpoint's initial rationale for operating in the 12 GHz band.[23/]

At this point, Northpoint's continued emphasis on local-into-local programming is nothing but a politically attractive "hook" upon which to hang an otherwise naked spectrum grab. Even if Northpoint does provide local channels as part of its MVPD package, local channels would use only a small fraction (10-20 MHz at most, assuming conservative compression technology) of the 500 MHz requested by Northpoint. It is clear that provision of such signals is now a minor part of Northpoint's business plan. Moreover, Northpoint's new business plan would do nothing to advance the Congressional mandate of bringing "local broadcast television signals to *satellite television subscribers* in *unserved and underserved local television markets*."[24/]

[23/] Without the cooperation of DBS licensees, it is far from clear how Northpoint could insert local channels seamlessly into DBS services. DirecTV, for example, uses a digital video compression technology that is proprietary and non-standard. Without access to this proprietary technology, Northpoint's signals cannot be decoded by the DBS set top box. Similarly, the program guide and system information protocol used by DirecTV, which is an essential tool for consumers to navigate between channels, is different from the protocol that the U.S. broadcasters have adopted. Finally, the modulation and error correction employed by satellite carriers is optimized for satellite propagation characteristics and spacecraft power limitations, and is not likely to be optimal for terrestrial video distribution. SkyBridge explained these technical obstacles in detail in its NPRM Reply Comments at 93-96, and they remain unrefuted by Northpoint.

Indeed, ***in apparent recognition of the necessity of DBS licensee cooperation, Northpoint's Petition for Rulemaking proposed that only DBS affiliates be licensed for Northpoint type services***. Petition for Rulemaking to Modify Section 101.147(p) of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Digital Broadcast Satellite Licensees and Their Affiliates, RM-9245, March 6, 1998, Attachment A. However, none of the parties filing the Broadwave Applications appear to have any affiliation with any DBS provider, and thus would not even be eligible for licensing under Northpoint's proposed rules.

[24/] Satellite Home Viewer Act ("SHVA"), Section 2005(a) (emphasis added). See (continued...)

2. Northpoint will gain no commercial advantage by operating in the 12 GHz band.

Northpoint next argued that it cannot deploy its terrestrial wireless broadband service in the bands actually slated by the Commission for such services without incurring substantial costs and time delays associated with developing different equipment.[25] This situation is no different from that faced by its competitors, but also is rather misleading.[26] In fact, terrestrial wireless broadband services are currently being provided by competitors in various bands set aside for such services. Northpoint has made no showing whatsoever that it will experience any difficulty in obtaining equipment for its service operating in other bands.

Northpoint also claims that, even if it could use another band, it will nonetheless enjoy commercial advantages over other MVPD competitors by exploiting existing off-the-shelf DBS equipment. In Northpoint's scheme, consumers will purchase a second DBS dish and other related equipment, which Northpoint would then reconfigure to receive its services.

However, as noted above, due to the often proprietary encoding, transmission, and system information protocols employed by DBS operators, it is unlikely that Northpoint will be able to make use of the DBS receivers. Moreover, Northpoint must provide not only an antenna pointed towards the nearest Northpoint transmitter, but also a separate low-noise block down converter ("LNB"). It cannot simply interconnect its antenna to the front end of the DBS LNB without significantly degrading the DBS reception. Therefore, since it must supply its own LNB anyway,

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[24] (...continued)
infra Section II.C.

[25] Comments of Northpoint Technology, Ltd. in ET Docket No. 98-206, RM-9147, RM-9245, March 2, 1999 ("Northpoint NPRM Comments") at 15.

[26] For example, Northpoint claims that wireless cable providers "do not have equipment that is availably at attractive price points in consumer electronics retailers." Northpoint NPRM Comments at 16. This, of course, is a patently misleading statement. Wireless cable operators historically have not sought to market equipment at the retail level, á la DBS, choosing instead to follow the cable television industry's model of leasing the equipment. There is no reason to believe that 2.5 GHz equipment could not be made available in mass retail quantities at prices equal to or below current DBS equipment. The MCI/Sprint rollouts of digital broadband service via 2.5 GHz facilities will assure this.

Northpoint can downconvert from other frequencies (e.g., LMDS, MMDS, or DEMS frequencies) just as easily as it can downconvert from the 12.2-12.7 GHz band.[27/]

Moreover, Northpoint is guaranteed to incur costs and time delays in developing point-to-multipoint transmission equipment in the 12 GHz band, as such commercial equipment does not currently exist. Because there is no allocation for such services in the band, there has been no market for such transmitters. Northpoint has never demonstrated that there would be a price advantage for transmission equipment in the currently non-existent 12 GHz terrestrial point-to-multipoint market.

3. There is no technical reason why Northpoint could not operate in one of the allocated bands.

Northpoint's most recent attempt to explain why it could not use one of the allocated bands is patently absurd. In the January 6 Letter, Northpoint claims that, because some of the services using those other bands (e.g., 2.5 GHz) operate at much higher power than it proposes,[28/] it could not coexist with them.[29/] However, no party has ever suggested that Northpoint coexist with those services. Those services are licensed on a geographic basis (e.g., by BTA), essentially to one licensee, who can choose whatever services, within the relevant technical parameters, it thinks will best meet market demand within its service area. Within that area, it has essentially exclusive use of the band. There is nothing to stop Northpoint from purchasing 2.5 GHz, 28 GHz, or 38 GHz licenses, or participating in the 700 MHz or 24 GHz auctions scheduled for later this year. In any of those bands, without the need to "point north," it could optimize its network architecture and provide far more competitive services that it ever could at 12 GHz, interference issues aside.

Why Northpoint resists this obvious alternative so strenuously, if unconvincingly, appears to be based on the unspoken hope that its access to the 12 GHz band will be cost-free. For this hope to be realized, however, a totally unjustifiable departure from Commission precedent would be required.

The Broadwave applications have not been placed on Public Notice as acceptable for filing. Assuming *arguendo* that they ever were to achieve such status, the Public Notice announcing that fact would have to solicit competing applications.

27/ Northpoint NPRM Comments at 13-14. It should be pointed out that modifying a DBS receiver voids the warranty, and could pose a safety hazard. It would also void the relevant FCC equipment authorization.

28/ Even this claim is only partially true. If the maximum power proposed in the Broadwave applications is used (45 dBm), the difference is not great.

29/ Northpoint January 6 Letter, Technical Annex at 3.

This, in turn, inevitably would lead to mutually exclusive applications and auctions. Nothing in Northpoint's voluminous filings suggests a contrary result. Moreover, there is nothing to the contrary in the SHVA, which Northpoint alludes to in the January 6 Letter.[30/]

In sum, none of the reasons Northpoint has proffered to justify its use of the 12 GHz withstand the slightest scrutiny. There are no technical or financial advantages to be gained by Northpoint in the 12 GHz band, and moving to a band unencumbered by DBS and NGSO systems would afford it far greater flexibility to respond to marketplace demand.

B. Unlike NGSO FSS proponents, Northpoint has failed to demonstrate that its system can successfully share the spectrum with primary users of the band.

NGSO FSS systems have been allocated internationally on a primary basis in the subject band, and the Commission has proposed to adopt this allocation domestically. Despite Northpoint's claims that its operations would impose no real burden on NGSO systems, it admits that it would, in the absence of ameliorative efforts by NGSO systems, cause substantial harmful interference. Indeed, as discussed below, Northpoint's sharing proposals would impose enormous costs on such primary systems.

When SkyBridge filed its application to enter the 12 GHz band three years ago, the Commission made it clear it would not make any allocation, adopt any service rules, or license any NGSO FSS system in the band until a definitive showing was made by NGSO FSS proponents that DBS systems in the band would be fully protected. Essentially, SkyBridge was required to reach consensus with the DBS industry before any of its proposals would be permitted to go forward.

As the Commission is aware, after more than three years of rigorous study and compromise, international consensus has been reached on the technical rules to facilitate entry of new NGSO FSS services while protecting these DBS services. This success has been at the considerable effort and expense of SkyBridge and the DBS operators.[31/] Northpoint, on the other hand, appears unwilling to undertake the efforts required for such an agreement, and, as a result, has thus far failed to reach consensus with either DBS or NGSO systems as to the technical compatibility of its proposal with satellite operations. As recently noted by DirecTV, ***Northpoint has not***

30/ See infra Section II.C.

31/ See Letter to Chairman William Kennard from Gary M. Epstein et al., on behalf of DirecTV, ET Docket No. 98-206, January 27, 2000 at 5.